IN THE SPECIFICATION:

Applicant proposes to amend the specification as set forth below.

Please amend paragraph number **[0004]** as follows:

[0004] Conventional IC devices, such as BGA, TSOP, SOP, SOJ, etc. packages, generally comprise a semiconductor die electrically connected to a plurality of electrical leads that is encased within an encapsulant material, a portion of each of the electrical leads extending from the encapsulant material and configured for establishing electrical connections between the semiconductor die and external components or higher-level packaging. An exemplary embodiment of a conventional BGA package is shown in FIGS. 1 and 2. The conventional BGA package 10 includes a semiconductor die 20 secured to a die-attach pad 35 formed on an upper surface 31 of a substrate 30, which may also be termed an ~~"interposer".~~ "interposer." The BGA package 10 also includes a plurality of electrical leads 40 adapted to provide electrical communication between the semiconductor die 20 and one or more external components (not shown). The semiconductor die 20 and at least a portion of each electrical lead 40 may be encased by an encapsulant material 50. The conventional BGA package 10 may be a memory device, such as a DRAM chip, a processor, or any other integrated circuit device known in the art.

Please amend paragraph number **[0008]** as follows:

[0008] During the fabrication of an IC device, the IC device may be subjected to individual component-level testing, such as burn-in and electrical testing. An IC device that exhibits a desired level of performance during ~~component~~ component-level testing is generally referred to as a "known good device" or "known good die" while an IC device failing to meet minimum performance characteristics may be referred to as a "known bad device." After component-level testing, the IC device may be assembled into higher-level packaging, such as an MCM, and again subjected to testing. Testing of higher-level packaging such as an MCM - referred to herein as module level testing - may include burn-in, electrical characterization and performance evaluation, as well as other desired electrical testing.

Please amend paragraph number **[0009]** as follows:

[0009] If an MCM fails to exhibit minimum operating characteristics during module level testing, an IC device causing the failure - which may have previously been identified as a "known good device" during ~~component~~ component-level testing - must be removed from the MCM and replaced. Also, it may be desirable to introduce a "known bad" IC device into an MCM for module level testing in order to observe the electrical characteristics of the MCM with the "known bad" IC device, or to observe the electrical characteristics of the "known bad" IC device at the module level. After module level testing is complete, the "known bad" IC device must be removed from the MCM and replaced. Thus, although individual IC devices are typically tested at the component level, it is desirable to subject IC devices to further testing at the module level, as a "known good device" may fail at the module level and, further, because incorporation of a "known bad device" into an MCM may be useful in module level testing.

Please amend paragraph number **[0035]** as follows:

[0035] ~~FIG.14A~~ FIG. 14A shows a cross-sectional view of a spring contact according to an embodiment of the invention having the spring coils in contact;

Please amend paragraph number **[0041]** as follows:

[0041] Each spring contact 120 is configured to engage and resiliently bias against an individual conductive ball 41 of the BGA package 10 in order to establish physical and electrical contact between the conductive ball 41 and the spring contact 120. Referring to FIG. 5, the conventional BGA package 10 is shown mounted to the substrate 160. Each conductive ball 41 of the BGA package 10 is engaged with and specifically, as illustrated, at least partially received within a contact portion 122 of a corresponding spring contact 120 disposed on the substrate 160, the array 121 of spring contacts 120 - as well as the array 171 of apertures 170 - being arranged in a pattern matching the pin-out of the conductive balls 41 extending from the BGA package 10. Thus, an electrical connection is formed between each conductive ball 41 of the BGA package 10 and one of the spring contacts 120 disposed on the substrate 160. Additionally, compression of the spring contacts 120 as BGA package 10 is disposed against substrate 160 will help to reduce

inductive electrical effects as the spring contacts 120 are compressed and laterally adjacent coils or segments thereof are placed in mutual contact to effectively shorten the electrical path and reduce inductance.

Please amend paragraph number **[0042]** as follows:

[0042] To secure the BGA package 10 to the substrate 160 and to create both physical and electrical contact between each conductive ball 41 and a mating spring contact 120, the BGA package 10 is held against the substrate 160 - and biased against the spring contacts 120 - by a clamping element 90. The clamping element 90 illustrated in FIG. 5 may be any suitable clip or clamp known in the art adapted to secure the BGA package 10 to the substrate 160. For example, the clamping element 90 may comprise a stab-in-place clip 95 having one or more resilient tabs or prongs 96 configured for insertion into corresponding holes 164 in the substrate 160. The resilient tab or tabs 96 are retained by the corresponding hole or holes 164 to secure the BGA package 10 to the substrate 160 and to bias the conductive balls 41 thereof against the spring contacts 120. Typically, such stab-in-place type ~~clips~~ clips 95 are injection molded from plastic materials and are relatively inexpensive. In addition to the foregoing, it is also contemplated that various apparatus disclosed and claimed in copending U.S. patent application Serial No. 09/478,619, filed January 5, 2000 and assigned to the assignee of the present invention, may be employed to secure BGA package 10 to the substrate 160. The disclosure of U.S. patent application Serial No. 09/478,619 is hereby incorporated herein by reference.

Please amend paragraph number **[0052]** as follows:

[0052] The spring contact 320 and mating aperture 370 shown in FIG. 8 are, therefore, similar to the spring contact 120 and aperture 170 shown in FIGS. 3 through 6; however, the contact portion 322 of spring contact 320 comprises a generally cone-shaped coil spring having an apex or point 323 for contacting and/or penetrating the outer surface of a conductive ball 41 (shown in dashed line in FIG. 8). The apex or point 323 can penetrate or puncture any layer of oxide or other contaminants formed on the exterior surface of conductive ball 41, such that

reliable electrical contact can be established between the spring contact 320 and the conductive ball 41. It should be understood that any suitable type ~~tip~~ apex or point 323 capable of penetrating or puncturing a layer or layers of oxide or contaminates on the conductive ball 41 may be used. Also, the seat portion 372 of aperture 370 comprises a generally cylindrical shape for aligning the conductive ball 41 relative to the spring contact 320. It should be noted that, for the embodiment shown in FIG. 8, alignment of the conductive ball 41 relative to the spring contact 320 and substrate 360 is performed primarily by the seat portion 372 of the aperture 370.

Please amend paragraph number **[0064]** as follows:

[0064] Those of ordinary skill in the art will appreciate that the various features of the spring contacts 120, 220, 320, 420, 520, 620, 720, 820, 920a, 920b shown and described with respect to FIGS. 3 through 14 may be used in any suitable combination. A spring contact having any type of contact portion - i.e., a generally ~~hemispherically or conically~~ hemispherical or conical shape, a generally ~~cylindrically~~ cylindrical shape, or a cone-shape having an apex - may be used in conjunction with any type of aperture - i.e., one having a ~~hemispherical shaped~~ hemispherically-shaped seat portion, a ~~conical shaped~~ conically-shaped seat portion, a ~~cylindrical shaped~~ cylindrically-shaped seat portion, or no seat portion. For example, a ~~cone~~ cone-shaped contact portion having an apex (see FIG. 8) may be used with an aperture having a hemispherical shape (see FIG. 6) or a conical shape (see FIG. 7).

Please amend paragraph number **[0069]** as follows:

[0069] A spring contact according to the present invention having been herein described, those of ordinary skill in the art will appreciate the many advantages of the present invention. The spring contacts of the present invention provide robust and reliable non-permanent electrical connections between a lead element or elements extending between an IC device and a substrate, such as an MCM carrier substrate. The electrical connection provided by such a spring contact can be easily severed without ~~mechanical or~~ mechanical- or heat-induced damage. Also, use of spring contacts according to the invention enables IC devices to be directly attached to a substrate, without the need for relatively expensive sockets. Further,

any of the spring contacts described herein may be used for testing applications - such as for the temporary mounting of IC devices to a burn-in or other test board - or for final assembly of an electrical component, such as an MCM.